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REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested. Claims 1 –8, 10- 26 and 28-51 are pending in the application, claims 9 and 27 are canceled, claims 1, 16, 28, 32, 46, and 51 are amended.

ALLOWED CLAIMS

The Examiner is thanked for allowing claims 24 and 50. It is noted that the Examiner has withdrawn his earlier allowance of claims 25 and 26.

CLAIM REJECTIONS – 35 USC § 102 and 103

The Examiner rejects claims 1-8, 10, 11, 13-15, 25, 26, 29 31-39 41, 42, 46 and 51 under 35 USC 102(e) as being anticipated by Deering, US Patent No. 6,559,842.

Deering U.S. Patent No. 6,525,722, describes a solution for geometrical compression that uses an instruction set that includes the ability to specify whether an attribute is global or is relevant only to a specific vertex. The idea is to avoid having to decode multiple instances of a given object. That is to say, if I have a first copy of an object and I see it a second time, I can simply point to the first time. It is noted that using Deering, objects are only found at run time, that is at compression time. There is no concept of functional descriptions, only that of repetition.

The present invention by contrast teaches prestored functional forms of geometric primitives. The geometric primitives are then found in the data being compressed and more complex shapes are identified as being combinations and manipulations of these primitives. In the end the compression data is simply a procedural description of how to synthesize and take the underlying geometrical primitives, and apply, for example, size, deformation and Boolean operations and parameters to them. This is the meaning of the term procedural description in the claims.

To take an illustrative example, let us say that the geometric data includes a cross. Procedurally, this cross might be defined as the (point-set) Boolean union of two cylinders of unit length that intersect. Thus the terms "Boolean union" and "cylinder" or

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code representatives thereof would be the functional form. A procedure that said create two cylinders that intersect at right angles at location X and have unit length would be the procedural description.

The independent claims have all been amended to more positively recite arbitrary shapes being recognized as functional forms, and the construction based thereon of procedural descriptions.

Deering by contrast does not teach recognition of geometric primitives from arbitrary data as a functional form based on prestored information. Furthermore Deering does not teach construction of procedural descriptions based on the functional forms. Rather Deering teaches recognition of reuse of a shape already compressed earlier and is incapable of synthesizing new geometry based on previously decompressed geometry.

Referring now to claim 1, Deering fails to describe:

"an analyzer linked to said input and operable for analysis of said received arbitrary graphical data into constituent geometrical parts, where at least some of said constituent geometric parts comprise **predetermined** shapes and forms,"

since Deering does not teach predetermined shapes or forms.

Deering further fails to describe:

"a three-dimensional scene describer, linked to said analyzer and configured for description of said at least some of said constituent geometrical parts **as a procedural description** of said received arbitrary graphical data, said three dimensional scene describer further being configured such that **said procedural description comprises a high level three dimensional functional form representing one of said constituent geometrical parts,**"

since Deering never teaches a description of any kind, certainly not a procedural description, and certainly not a procedural description that includes one or more of the functional forms that describe geometric primitives.

It is noted that, with the present invention, *arbitrary* graphical data - data which is not limited to a predefined set of graphical parts, is analyzed/synthesized into constituent

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geometrical parts. The constituent geometrical parts comprise *predetermined* shapes and forms, described using high level three dimensional functional forms.

Claim 16 has been amended to include the same limitations as claim 1. It is thus respectfully believed that claim 16 is both novel and inventive over the prior art and should be allowed.

Claims 25 and 28 have been amended to include the same limitations as claim 1.

It is thus respectfully believed that claim 28 is both novel and inventive over the prior art and should be allowed.

Claim 32 has likewise been amended to include the same limitations as claim 1.

It is thus respectfully believed that claim 32 is both novel and inventive over the prior art and should be allowed.

Claim 43 has also been amended to include the same limitations as claim 1. It is thus respectfully believed that claim 43 is both novel and inventive over the prior art and should be allowed.

Claim 46 has been amended to include the same limitations as claim 1. It is thus respectfully believed that claim 46 as previously presented is both novel and inventive over the prior art and should be allowed.

Claim 51 has been amended to include the same limitations as claim 1. It is thus respectfully believed that claim 51 as previously presented is both novel and inventive over the prior art and should be allowed.
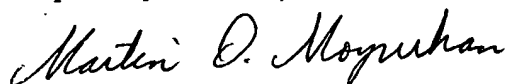
The remaining claims mentioned in this Office Action are believed to be allowable as being dependent on an allowable main claim.

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All of the matters raised by the Examiner have been dealt with and are believed to have been overcome.

In view of the foregoing, it is respectfully submitted that all the claims now pending in the application are allowable.

An early Notice of Allowance is therefore respectfully requested.

Respectfully submitted,

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